

PHNL030313

PCT/IB2004/050312

## CLAIMS:

1. A lamp-reflector unit comprising:
  - a reflector with a neck, a light emission window, a reflecting portion arranged around an optical axis extending through the neck and perpendicular to the light emission window, which reflecting portion extends from the neck up to the light emission window;
  - 5 a lamp comprising a first light source, and a second light source, said first and second light sources being located one behind the other, axially on the optical axis such that the first light source is located closer to the neck than the second light source;
  - 10 a lamp cap mounted to the neck and provided with electrical contacts and with current conductors connected to the latter and to the respective light sources,characterized in that the reflecting portion is formed in accordance with a body of revolution about the optical axis of a curve which, seen in a longitudinal sectional view of the reflector through the optical axis, extends between a starting point on the neck and an end point on the light emission window, such that by means of auxiliary functions of:
  - 15 a straight line section with n line points extending between the starting point and the end point;
  - a line section of a parabola with n parabola points extending between the starting point and the end point, having a parabola axis coinciding with the optical axis and having a focus F on the optical axis;
  - 20 each individual point  $K_n$  on the curve lies at a distance  $x.D_n$  from a parabola point  $P_n$  and at a distance  $(1-x).D_n$  from a line point  $L_n$ , measured along a straight connecting line  $V_n$  between  $P_n$  and  $L_n$ , wherein  $V_n$  lies in the plane of the longitudinal section and is perpendicular to the straight line section, wherein  $D_n$  is the distance between  $P_n$  and  $L_n$  measured along  $V_n$ , and wherein  $x$  is substantially constant for the entire curve and has a value in a range of  $0.25 \leq x \leq 0.75$ .
2. A lamp-reflector unit as claimed in claim 1, characterized in that, viewed in the longitudinal section, a line through the starting point and the focus F encloses an angle  $\alpha_1$  with the optical axis, and in that a further line through the end point and the focus F encloses 30 an angle  $\alpha_2$  with the optical axis, wherein  $30^\circ \leq \alpha_1 \leq 50^\circ$  and  $40^\circ \leq \alpha_2 \leq 60^\circ$ .
3. A lamp-reflector unit as claimed in claim 1 or 2, characterized in that the lamp is fixed by an end portion in the neck of the reflector.

PHNL030313

PCT/IB2004/050312

4. A lamp-reflector unit as claimed in claim 1, 2, or 3, characterized in that the lamp is a low-voltage halogen incandescent lamp.
5. A lamp-reflector unit as claimed in claim 4, characterized in that the light sources are filaments which are each manufactured from a separate wire.
6. A lamp-reflector unit as claimed in claim 5, characterized in that the halogen incandescent lamp is a modified dual-filament halogen automobile lamp.
- 10 7. A lamp-reflector unit as claimed in any one of the preceding claims, characterized in that the reflecting portion is subdivided into p facet rings, wherein the curve is approximated in that each facet ring p, seen in the longitudinal section, is oriented along a respective tangent line m to the curve halfway the relevant facet ring p.
- 15 8. A lamp-reflector unit as claimed in any one of the preceding claims, characterized in that the reflecting portion is subdivided into r axial segments.
9. A lamp-reflector unit as claimed in any one of the preceding claims, characterized in that the lamp has a translucent wall comprising a first and a second wall portion which surround the first and the second light source, respectively, wherein at least one wall portion has a spectrally modifying effect on light originating from the light source and passing through the relevant wall portion.
- 20 10. A lamp-reflector unit as claimed in claim 9, characterized in that at least one of the wall portions has a coating.